

WHAT IS CLAIMED IS:

1. A protective sheet peeling device which separates a protective sheet which is superposed with a sheet, the device comprising:

a conveying mechanism conveying the sheet and the protective sheet, which is superposed with one surface of the sheet, in a superposed state in a predetermined conveying direction along a predetermined path;

a free roller disposed so as to be freely rotatable at a downstream side, in the conveying direction, of the conveying mechanism, the free roller thereby curving conveying of the sheet and the protective sheet toward a protective sheet side; and

a displacement roller provided at a downstream side, in the conveying direction, of the free roller at a side of the predetermined path which side corresponds to the protective sheet which is being conveyed, and movable between a position at which a surface of the displacement roller reaches the path and a position at which the surface of the displacement roller is withdrawn from the path, and rotating in a direction opposite to the conveying direction,

wherein, after a leading end of at least one of the sheet and the protective sheet passes by the free roller, the displacement roller is moved to the position at which the surface of the displacement roller reaches the path, and the sheet and the protective sheet are partly curved along the free roller, and the protective sheet is thereby peeled off from the sheet.

2. The protective sheet peeling device of claim 1, wherein the sheet is a printing plate precursor having a support and a photosensitive layer formed on the support.

3. The protective sheet peeling device of claim 1, wherein the conveying mechanism has a conveying belt which conveys the sheet and the protective sheet in the conveying direction, and the conveying belt has a surface which contacts the protective sheet and which directs the sheet and the protective sheet toward the free roller.

4. The protective sheet peeling device of claim 1, wherein the conveying mechanism has at least one conveying roller disposed so as to oppose the free roller, and the sheet and the protective sheet are curved between the conveying roller and the free roller.

5. The protective sheet peeling device of claim 1, wherein a path which is forked-off from the predetermined path is formed by the displacement roller moving to the position of reaching the predetermined path, and the protective sheet which has been separated is led to the forked-off path.

6. The protective sheet peeling device of claim 5, wherein the displacement roller has a belt which is trained around at least one portion of the displacement roller, and the belt has a surface which moves along the forked-off path.

7. The protective sheet peeling device of claim 1, wherein a portion at which convex and concave portions repeat along a peripheral direction is formed at a peripheral surface of the displacement roller, and the portion is formed of a rubber material.

8. The protective sheet peeling device of claim 1, wherein a sensor, which detects a leading end of at least one of the sheet and the protective sheet which have been conveyed in, is provided at a downstream side, in the conveying direction, of the free roller, and movement of the displacement roller is controlled on the basis of a sensing operation of the sensor.

9. A protective sheet peeling method which separates, from a sheet which is being conveyed, a protective sheet which is superposed with one surface of the sheet, the method comprising the steps of:

conveying the sheet and the protective sheet, which is superposed with the one surface of the sheet, in a first direction along a predetermined conveying path;

curving, toward a protective sheet side and along a portion of a first roller of which one portion is set on the predetermined conveying path, the sheet and the protective sheet which have been conveyed in;

after a leading end of at least one of the sheet and the protective sheet passes by the first roller, making a second roller, which rotates in a direction opposite the first direction, abut the sheet and the protective sheet from a protective sheet side, thereby applying conveying force in the direction opposite the first direction to the protective sheet and peeling and protective sheet from the sheet; and

conveying the peeled-off protective sheet along a path which is forked-off from the predetermined conveying path.

10. The protective sheet peeling method of claim 9, wherein the sheet is a printing plate precursor having a support and a photosensitive layer formed on the

support.

11. A protective sheet peeling device which, at a time when a sheet, which is removed together with a protective sheet superposed with one surface of the sheet, is conveyed in order to be supplied to a subsequent process section, peels off and separates the protective sheet from the sheet, the device comprising:

a conveying roller provided at a side of the one surface of the sheet which is being conveyed, and conveying the sheet and the protective sheet toward the subsequent process section by being driven to rotate;

a free roller provided so as to correspond to a side of another surface of the sheet which is conveyed downstream of the conveying roller, and disposed in a state in which one portion of the free roller is on a predetermined conveying locus of the sheet, and rotating freely; and

a displacement roller provided so as to correspond to the side of the one surface of the sheet which is conveyed downstream of the free roller, and able to move between a state of arriving on the predetermined conveying locus and a state of being withdrawn from the predetermined conveying locus, and being driven to rotate in a direction opposite a rotating direction of the conveying roller,

wherein, after the sheet and the protective sheet have passed by the free roller, the displacement roller is moved onto the predetermined conveying locus, and thereby, while the sheet and the protective sheet are being forcibly curved along the free roller, the protective sheet is peeled off from the sheet by rotation of the displacement roller in the opposite direction.

12. The protective sheet peeling device of claim 11, wherein a finned portion,

which is formed of rubber and at which convex and concave portions are continuous along a peripheral direction, is formed at a peripheral surface of the displacement roller.

13. The protective sheet peeling device of claim 11, further comprising a conveying belt which nips and conveys the protective sheet which has been peeled off from the sheet by the displacement roller.

14. The protective sheet peeling device of claim 11, wherein the sheet is a printing plate precursor having a support and a photosensitive layer formed on the support.

15. The protective sheet peeling device of claim 11, wherein the conveying roller has a conveying belt trained around at least one portion of the conveying roller, and the conveying belt has a surface which contacts the protective sheet and which directs the sheet and the protective sheet toward the free roller.

16. The protective sheet peeling device of claim 11, wherein the conveying roller is disposed so as to oppose the free roller, and the sheet and the protective sheet are curved between the conveying roller and the free roller.

17. The protective sheet peeling device of claim 11, wherein, due to the displacement roller moving toward a position of reaching the conveying locus, the displacement roller forms a path which is forked-off from a path heading toward the subsequent process section, and the peeled-off protective sheet is led to the

forked-off path.

18. The protective sheet peeling device of claim 17, wherein the displacement roller has a belt which is trained around at least one portion of the displacement roller, and the belt has a surface which moves along the forked-off path.

19. The protective sheet peeling device of claim 11, wherein a sensor, which detects a leading end of at least one of the sheet and the protective sheet, is provided at a downstream side, in a direction in which the sheet and the protective sheet are conveyed, of the free roller, and movement of the displacement roller is controlled on the basis of a sensing operation of the sensor.